UCRL-JC-121560 Abs

37th Annual Meeting. APS Division of Plasma Physics 6-10 November 1995, Louisville, KY Abstract Submittal Form

Deadline: Friday, 7 July 1995

Subject Classification Catagory 7.4 X-ray Lasers [X] Theory [X] Experiment

(refer to the DPP Catagory list in APS Meeting News)

Application of X-ray Laser Interferometry to Study High-density, Laser-produced Plasmas* A. S. Wan, L. B. Da Silva, T. W. Barbee, Jr., R. Cauble, P. Celliers, C. Decker, S. B. Libby, R. A. London, J. C. Moreno, J. E. Trebes, F. Weber Lawrence Livermore National Laboratory -- With the recent advances in the development of multilayer mirrors and beamsplitters in the soft x-ray regime, we have utilized the unique properties of x-ray lasers to study large, rapidly evolving laser-driven plasmas with high electron densities. Using a neon-like yttrium x-ray laser which operates at a wavelength of 15.5 nm, we have performed a series of x-ray laser interferometry experiments, operated in the Mach-Zehnder configuration, to characterize plasmas relevant to inertial confinement fusion. In this paper we describe experiments using a soft x-ray laser interferometer to study CH plasmas. We compare the two-dimensional density profiles obtained from the interferograms with profiles derived from multi-dimensional radiative hydrodynamics calculations. The development of soft x-ray interferometry allows us to validate and benchmark our numerical models used to study the physics of laser-plasma interactions.

** Work performed under the auspices of the U. S. Department of Energy by LLNL under contract number W-7405-ENG-48*

[ ] Prefer Poster Session

[X] Prefer Oral Session

[X] Place in the following grouping :
(Specify the order)
Wan, Cauble, Trebes, Decker

[ ] Special Facilities Requested
(*e.g.*, VCR/monitor, movie projector)

[ ] Other Special Requests
(*e.g.*, Supplemental session)

Submitted by:

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A faxed copy is NOT acceptable. This form, or a computer-generated form, plus TWO COPIES must be received by **Friday, 7 July 1995** at the following address:

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